

## CLAIMS

1. Agent for dyeing hair, characterized in that it contains at least one vat dye reduced by use of a compound which in an alkaline medium forms an enediol, said agent having a  
5 pH of 4 to 11.
2. Agent as defined in claim 1, characterized in that the compound forming an enediol in an alkaline medium is selected from among monohydroxyacetone, dihydroxyacetone, acetoin, glutaroin, adipoin, glycol aldehyde, benzoin, 2,3-dihydroxyacrylaldehyde  
10 and cyclopentadiolone.
3. Agent as defined in claim 1 or 2, characterized in that it contains the compound forming an enediol in an alkaline medium in an equimolar amount or in an up to 50-fold excess, based on the vat dye.  
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4. Agent as defined in one of claims 1 to 3, characterized in that the vat dye is selected from among Vat Yellow 1, C.I. Vat Yellow 2, C.I. Vat Yellow 3, C.I. Vat Yellow 4, C.I. Vat Yellow 12, C.I. Vat Yellow 13, C.I. Vat Yellow 17, C.I. Vat Yellow 20, C.I. Vat Yellow 26, C.I. Vat Yellow 28, C.I. Vat Yellow 33, C.I. Vat Yellow 46, C.I. Vat Orange 1,  
20 C.I. Vat Orange 2, C.I. Vat Orange 3, C.I. Vat Orange 7, C.I. Vat Orange 9, C.I. Vat Orange 11, C.I. Vat Orange 15, C.I. Vat Orange 17, C.I. Vat Orange 19, C.I. Vat Red 10, C.I. Vat Red 13, C.I. Vat Red 14, C.I. Vat Red 15, C.I. Vat Red 18, C.I. Vat Red 23, C.I. Vat Red 28, C.I. Vat Red 32, C.I. Vat Red 35, C.I. Vat Violet 1, C.I. Vat Violet 10, C.I. Vat  
25 Violet 15, C.I. Vat Violet 16, C.I. Vat Blue 4, C.I. Vat Blue 6, C.I. Vat Blue 20, C.I. Vat Blue 21, C.I. Vat Blue 25, C.I. Vat Blue 26, C.I. Vat 29, C.I. Vat Blue 30, C.I. Vat Blue 43, C.I. Vat Blue 64, C.I. Vat Blue 66, C.I. Vat Green 1, C.I. Vat Green 3, C.I. Vat Green 9, C.I. Vat Green 11, C.I. Vat Green 12, C.I. Vat Brown 1, C.I. Vat Brown 3, C.I. Vat Brown 45, C.I. Vat Black 16, C.I. Vat Black 25, C.I. Vat Black 27, C.I. Vat Black 29 and mixtures thereof.  
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5. Agent as defined in one of claims 1 to 4, characterized in that the vat dye is used in a total amount from 0.01 to 10 weight percent.

6. Agent as defined in one of claims 1 to 5, characterized in that additionally it contains a cationic compound.
- 5    7. Agent as defined in claim 6, characterized in that the cationic compound is selected from among Polyquaternium-2, Polyquaternium-4, Polyquaternium-5, Polyquaternium-6, Polyquaternium-7, Polyquaternium-10, Polyquaternium-11, Polyquaternium-15, Polyquaternium-16, Polyquaternium-17, Polyquaternium-18, Polyquaternium-19, Polyquaternium-20, Polyquaternium-22, Polyquaternium-24, Polyquaternium-27, 10 Polyquaternium-28, Polyquaternium-29, Polyquaternium-31, Polyquaternium-35, Polyquaternium-36, Polyquaternium-37, Polyquaternium-39, Polyquaternium-44, Polyquaternium-46, Polyquaternium-47, Polyquaternium-51, Polyquaternium-55, Polyquaternium-57, Quaternium-80 hydroxypropylguar-hydroxypropyltrimethylammonium chloride, guar-hydroxypropyltrimethylammonium chloride and mixtures thereof.
- 15    8. Agent as defined in claim 6 or 7, characterized in that it contains the cationic compound in a total amount from 0.001 to 5 weight percent.
9. Agent as defined in one of claims 1 to 8, characterized in that it additionally contains developers and/or couplers and/or natural or synthetic direct dyes.
- 20    10. Use, for dyeing hair at a pH of 4 to 11, of vat dyes (leuko vat dyes) prerduced by compounds which in a strongly alkaline medium (pH 10-13) form an enediol.
- 25    11. Method for dyeing hair whereby the vat dyes prerduced by compounds which in a strongly alkaline medium (pH = 10 - 13) form enediols are applied to hair at a physiologically tolerable pH (pH = 4 - 11) and after a treatment time of 1 to 60 minutes at 15 to 60 °C are re-oxidized with atmospheric oxygen or with an oxidant to form an insoluble pigment.
- 30    12. Method as defined in claim 11, characterized in that the oxidant is selected from among hydrogen peroxide and the compounds of addition thereof to urea, melamine and sodium borate, furthermore persulfates and mixtures thereof.